SECTION 1 – IDENTIFY NATIONAL SECTOR RISKS

I. OVERVIEW

The purpose of this section of the toolkit is to assist responding countries to assess their Y2K status and to identify Y2K business risks at the national level for five sectors of the economy: **Customs, Energy, Finance, Telecommunications and Transportation.**

- **Assess Y2K preparedness at the sector level**
- **Identify risks associated with each sector and their impacts on the sector**
- **Identify risks to each sector as a result of Y2K failure in other economic sectors**

II. SECTOR PROFILE INSTRUCTIONS

The appropriate sector specialists for each responding country should complete this section for each sector.

The respondents will begin by developing a Sector Profile for Y2K status including number of organizations, budget, expenditures to date, current percentages of completion and planned Third Quarter 1999 completion status for the various Y2K preparedness activities. This information should be completed for all segments of each sector. Suggested business segments have been printed on the table template for each sector. Delete segment names which do not apply to the responding country and/or add additional business segments particular to the responding country.

The purpose of this exercise is to display Y2K preparedness levels throughout the sector and to locate gaps between expectations and probable results. This information will indicate where additional resources or alternate strategies may be needed to achieve some level of Y2K preparedness.

Additional references for this section that can be used to complete your worksheet include:

- Step-by-Step Examples Throughout this Section
- Definitions of Terms in this Section

IMPORTANT: LOOK AT THE SAMPLE TABLE AS YOU GO.

❶ In the ***Segment*** column, list the business segments which comprise the economic sector being profiled, concentrating upon those segments which have significant international components or activities.

EXAMPLE: Transportation segments– air transportation, railroads, maritime transportation, etc.

❷ In the ***Number of Organizations*** column, list the total number of organizations in each segment of the sector.

EXAMPLE: Energy Sector/Nuclear segment – 20 (nuclear power plants/companies)

❸ In the ***Total Y2K Budget*** column, list the aggregate Y2K budget of all organizations in the segment in local currency for the organizations tallied in Step ❷.

❹ In the ***Total Y2K Expenditures to Date*** column, list the best estimate of the aggregate amount spent on Y2K by all organizations in the segment in local currency, as of the self-assessment date.

❺ In the ***% of Expenditures to Budget*** column, list the percentage derived from dividing the Total Y2K Expenditures to Date for each segment by the Total Y2K Budget.

The next 10 columns, collectively referred to as ***% of Organizations that have Completed Y2K Efforts for Mission Critical Operations,*** show the number of firms with activities for mission-critical operations totally complete for the given Y2K activity as a percentage of total firms in the segment. Partial completion of the activity for a given organization is not recognized.

This category is subdivided into *percentage completed* status as of the self-assessment date and *expected percentage completed* status as of September 30, 1999.

The columns headings for each category are the same for both periods and are only explained once.

❻ In the ***Assessment*** column, list percentage of firms having completed assessment tasks for all mission-critical items in their organizations. Assessment tasks include inventory, prioritization, compliance determinations of systems & equipment, etc.

EXAMPLE: Banking segment - Of the total number of banks, what percentage have completed assessment for all mission-critical operations - any organization less than wholly complete does not contribute to the percentage –100% means 10 of 10 (in the example) for the Banking segment.

❼ In the ***Remediation*** column, list percentage of firms having completed remediation activities for all mission-critical items in their organizations. Remediation activities include computer code repairs, equipment replacement, software upgrades, etc.

EXAMPLE: Banking segment - Of the total number of banks, what percentage have completed remediation for all mission-critical operations - 90% means 9 of 10 (in the example) for the Banking segment.

❽ In the ***Test*** column, list percentage of firms having completed Y2K testing of remediation activities, i.e. Y2K testing of business processes which utilize Y2K-compliant equipment.

EXAMPLE: Banking segment - Of the total number of banks, what percentage have completed all post-remediation testing for all mission-critical operations? - 80% means 8 of 10 (in the example) for the Banking segment.

❾ In the ***Deploy*** column, list percentage of firms having completed all necessary activities to put Y2K tested items into daily business use, i.e. ensure that the Y2K-tested systems are in use throughout all parts of the organization for mission-critical functions.

EXAMPLE: Banking segment - Of the total number of banks, what percentage have completed deployment of Y2K-compliant systems and equipment for all mission-critical operations - 70% means 7 of 10 (in the example) for the Banking segment.

❿ In the ***Contingency Planning*** column, list percentage of firms who have completed plans for their organization's response to unforeseen or externally controlled Y2K failures, i.e. formal plans for manual procedures to accomplish automated business tasks and specify individuals responsible for coordinating emergency activities.

EXAMPLE. Banking segment – Of the total number of banks, what percentage have completed contingency plans for all mission-critical operations - 60% means 6 of 10 (in the example) for the Banking segment.

III. DEFINITIONS

National level –As related to a single country.

Mission-critical operations - Primary activities of an organization that are of essential importance to the accomplishment of that organization's mission. Viability of the organization will be in jeopardy. If any of these activities should fail, the potential consequences associated with failure of mission-critical operations include:

- outright shutdown of the organization
- excessive financial losses
- potential loss of human life
- severe damage to reputation
- severe legal ramifications including, but not limited to, incarceration and/or large financial penalties

Y2K-compliant – Having completed a predefined procedure for testing normal functionality on key Y2K-related dates and documenting the test results.

IV. EXAMPLE WORKSHEET

The example below is provided to give responding countries an illustration of potential responses.

SECTOR PROFILE TABLE

Responding Country: X
Sector: FINANCE

					% of Organizations that have Completed Y2K Efforts for Mission Critical Operations									
					Current					Estimated as of Sept. 30, 1999				
Segment	# of Orgs.	Total Y2K Budget	Total Y2K Expenditures to Date	% of Expenditures to Budget	Assessment	Remediation	Test	Deploy	Contingency Planning	Assessment	Remediation	Test	Deploy	Contingency Planning
Banking	10	$500M	$400M	80%	100%	90%	80%	70%	60%	100%	100%	100%	90%	90%
Capital	3	$180M	$162M	90%	100%	100%	0	0	0	100%	100%	100%	100%	66%
Central	1	$20M	$10M	50%	100%	0	0	0	0	100%	100%	100%	100%	100%

V. NATIONAL SECTOR RISK CHECKLIST INSTRUCTIONS

Appropriate sector specialists for each responding country should complete this section for each sector.

The National Sector Risk Checklist (in subsection VII) is designed to determine whether risks exist in relation to various Y2K activities and the level of impact failure may have on

the sector. The purpose of the exercise is to identify potential problem areas in achieving Y2K preparedness for each sector. The results of the checklist will be useful in determining where contingency planning will be necessary.

Additional references for this section that can be used to complete your worksheet include:

- Step by Step Examples Throughout this Section
- Definitions of Terms in this Section

IMPORTANT: LOOK AT THE SAMPLE CHECKLIST AS YOU GO

❶ Complete each question in the checklist as follows:

- **'Y'** indicates "Yes" or positive response to the question for a clear majority of related instances.
- **'N'** indicates "No" or negative response to the question; a "yes" response could not be justified.
- **'N/A'** response indicates the question does not apply for this sector.

❷ If the response is **'N'**, determine the impact – the degree to which Y2K failure would impact economic sector activities **(HI, MED, LO)**.

❸ List additional comments, which provide background information related to this sector failure, to note follow-up activities, and your rationale for the impact specified.

VI. DEFINITIONS

Impact – The degree to which the risk of Y2K failure or disruption affects the continued operation of sector-critical functions.

High (Impact) – Occurrence of this risk will likely cause serious disruption to sector segments carrying out their missions.

Medium (Impact) – Occurrence of this risk will disrupt the sector segments' ability to carry out their missions. However, "workarounds", such as manual processing, may be used for some period in place of automatic data sources.

Low (Impact) – Occurrence of this risk will not seriously disrupt the sector segments from carrying out their missions.

VII. EXAMPLE WORKSHEET

The example below is provided to give responding countries an illustration of potential responses.

NATIONAL SECTOR RISK CHECKLIST

Responding Country: X
Sector: FINANCE

Finance	
Y • N__N/A__	F1-a. Are the metrics for a sector profile readily available?
If no, list the impact, if any, of this gap? HI__MED__LO_	Comments:
Y __ N • N/A__	F1-b. Are expenditures to date consistent with phases completed?
If no, list the impact, if any, of this gap? HI • MED__LO_	Comments: *Central Bank expenditures inconsistent w/expectations.*
Y • N__N/A__	F1-c. Has senior management in each organization shown its commitment to adequate resources and funding to support their respective Y2K strategy?
If no, list the impact, if any, of this gap? HI__MED__LO_	Comments:
Y • N__N/A__	F1-d. Have the organizations established a formal office from which to manage Y2K issues?
If no, list the impact, if any, of this gap? HI__MED__LO_	Comments:
Y __N • N/A__	F1-e. Have sector organizations developed strategies for achieving Y2K readiness?
If no, list the impact, if any, of this gap? HI__MED • LO	Comments: *Work in Progress.*
Y • N__N/A__	F1-f. Did a government or industry group with oversight responsibility for this sector recommend guidelines for dealing with Y2K issues?
If no, list the impact, if any, of this gap?	Comments:

VIII. NATIONAL CROSS-SECTOR RISK CHECKLIST INSTRUCTIONS

The appropriate sector specialists for each responding country should complete this section for each sector.

The National Cross-Sector Risk Checklist (in subsection X) is designed to determine what risks Y2K failure of various economic sectors pose to the responding country's other sectors. The purpose of the exercise is to identify dependent areas, determine effects and severity of Y2K failures, and to ascertain what information is currently available to the responding country. The results of the checklist will be useful in determining where contingency planning will be necessary.

Additional references for this section that can be used to complete your worksheet include:

- Step by Step Examples Throughout this Section
- Definitions of Terms in this Section

IMPORTANT: LOOK AT THE SAMPLE CHECKLIST AS YOU GO

❶ Complete each question in the checklist as follows:

- **'NO'** response indicates that there are no services from the cross-sector being used by the sector being examined. Proceed to the next cross-sector
- **'YES'** response requires a listing of the services used by the sector being examined.

❷ If the answer to the prior question was 'Yes', describe the impact of interruption or disruption of the services provided by the cross-sector, (preferably service by service.)

❸ Estimate how long the sector examined could function without the services provided by the cross-sector, i.e. how long could back-up or alternate methods be used before business activities would have to be suspended?

❹ Detail the responding country's information sources for Y2K preparedness of the cross-sector . Be as specific as possible, e.g. date of statement or information report, name of statement or document source. This will help to assess the reliability of the information provided.

IX. DEFINITIONS

<u>Cross-sector</u> – Between a sector and any of the other sectors.

X. EXAMPLE NATIONAL CROSS-SECTOR RISK CHECKLIST

The example below is provided to give responding countries an illustration of potential responses.

NATIONAL CROSS-SECTOR RISK CHECKLIST

Responding Country: X
Sector: FINANCE

CUSTOMS
Are CUSTOMS services used by the FINANCE sector? If No, proceed to ENERGY. If yes, list services (e.g. telephony, data communications) *None used*
Impact if not available (List impact by service) *N/A*
How long could FINANCE sector function with absence of these services? (List by service) *N/A*
What information do you have to indicate the Y2K preparedness of the CUSTOMS sector? *N/A*
ENERGY
Are ENERGY services used by the FINANCE sector? If No, proceed to TELECOMMUNICATIONS. If yes, list services (e.g. power, gas heating fuel) *Electrical Power.*
Impact if not available (List impact by service) *Many critical bank services would be curtailed.* *No stock exchanges (Country X stock exchanges currently have no backup power mechanisms)*
How long could FINANCE sector function with absence of these services? (List by service) *2 hours to 2 days*
What information do you have to indicate the Y2K preparedness of the ENERGY sector? *Trade association survey.*

SECTION 2 – ANALYZE NATIONAL SECTOR RISKS

I. OVERVIEW

The purpose of this section of the toolkit is to assist responding countries to analyze national Y2K compliance risks in each of the five sectors of their economy: **Customs, Energy, Finance, Telecommunications, and Transportation**. The objectives of this section of the toolkit are as follows:

- **Determine national risk probabilities**
- **Analyze national risks**
- **Optionally diagram national risk probabilities and impacts**

II. INSTRUCTIONS

The appropriate sector specialists for each responding country should complete this section for each sector.

An optional template is provided as a tool to help the responding country to visualize relative importance of these risks.

Additional references for this section that can be used to complete your worksheets include:
· Step-by-Step Examples Throughout this Section · Definitions of Terms in this Section

IMPORTANT: LOOK AT THE SAMPLE TABLE AS YOU GO

❶ Determine the probability of failure for each of the five sectors that would require the use of an established contingency plan or alternate resource supporting the basic function. Enter the results in the National Risk Probability Table in this section. The probability of failure is clearly a subjective judgement that is based on available information. Possible sources of information include:

- Responses to national Y2K surveys conducted by the responding country.
- Agencies within each sector.

Should all sources be exhausted, leaving you with little or no reliable information from which to assess the probability of failure, a “medium” probability rating may be appropriate. The key is to be consistent by assigning the same probability to all sectors that lack credible information.

❷ Conduct a review of the National Sector Profile, the National Risk Checklist, and National Cross-Sector Checklist of responses in Section 1. Develop a summary list of risks. List the risks in the National Risk Analysis table in this section. For each risk identified include the following:

- Impact of the risk on the sector, i.e., **HI, MED, LO**
- Related sector, i.e., Energy, Telecommunication, etc.
- Probability of sector failure, **HI, MED, LO**
- Organization responsible for managing the risk. i.e., Dept. of Energy, Central Bank, etc.

❸ Prioritize the risks identified by considering both the impact of the risk and the probability of sector failure as follows:

Impact			
HI	Priority = 2	Priority = 1	Priority = 1
MED	Priority = 3	Priority = 2	Priority = 1
LO	Priority = 3	Priority = 3	Priority = 2
	LO	**MED**	**HIGH**
		Probability	

❹ As an OPTIONAL step, you may display these risks in the National Risk Analysis Matrix in this section. Each risk is placed in the rectangle. This corresponds to the risk's impact and probability of sector failure assessments.

III. DEFINITIONS

National Risk Analysis: An analysis of risks caused by critical national sector failures with respect to their impact and probability.

Source Sector: The sector in the responding country for which analysis is being performed.

Risks Identified: List of potential failures that could impact the source sector.

HI probability: A reasonable likelihood of occurring (at least two orders of magnitude more likely to occur than a LO).

MED probability: Likelihood of occurring is not clearly high or low

LO probability: Highly unlikely to occur

Related Sector: The sector that can take appropriate actions to prevent identified risks.

Probability of Sector Failure: The likelihood of a particular sector failure.

Action Office: The organization within a "Related Sector" that can mitigate identified risks.

Priority: Rank order identified risks (each row of the National Risk Analysis table) with respect to their relative importance.

Contingency Strategy: List of planned actions that can mitigate the impact of identified risks if a loss or a failure should occur.

IV. SAMPLE WORKSHEETS

A. The example below is provided to give responding countries an illustration of potential responses.

NATIONAL RISK PROBABILITY TABLE

Responding Country: X
Sector: FINANCE

	Probability of Failure			
Customs	HI	MED	LO	N/A
				X
Energy	HI	MED	LO	N/A
			X	
Finance	HI	MED	LO	N/A
		X		
Telecomm	HI	MED	LO	N/A
		X		
Transportation	HI	MED	LO	N/A
			X	

B. The example below is provided to give responding countries an illustration of potential responses.

NATIONAL RISK ANALYSIS TABLE

Responding Country: X
Sector: FINANCE

Source Sector	Risk Description	Impact	Risk Factor	Risk Probability Factor	Action Officer		Contingency Strategy
FINANCE	Banking Services	HI	Failure	M E D	Central Bank	1	
FINANCE	Electronic Funds Transfer	HI	Telecommunications	M E D	PTT	1	
FINANCE	Electronic Funds Transfer	HI	Failure	LO	Dept. of Energy	2	
FINANCE	Electronic Funds Transfer	M E D	Failure	LO	Dept. of Transport	3	

C. The example below is provided to give responding countries an illustration of potential responses.

NATIONAL RISK ANALYSIS MATRIX

Responding Country: X
Sector: FINANCE

IMPACT				
↑	**HI**	**Electronic Fund Transfer** **Power Generation**	**Central Bank** **Telecommunication** **Services**	
	MED			
	LO			
		LO	**MED**	**HI**
PROBABILITY →				

SECTION 3 – ESTABLISH NATIONAL CONTINGENCY STRATEGIES FOR SECTOR

I. OVERVIEW

The purpose of this section of the toolkit is to assist responding countries to review the results of National Risk Analysis and to determine a contingency strategy for each of the risks identified in the National Risk Analysis table in the previous section. The objectives of this section of the toolkit are as follows:

- **Identify actions necessary to sustain a function or service (that government has determined necessary) if an infrastructure fails**
- **Determine unique challenges created by Y2K-related problems**
- **Evaluate existing plans of the responding country which address similar scenarios**
- **Determine contingency strategy**

II. INSTRUCTIONS

The responding country should complete the "Contingency Strategy" column in the "National Risk Analysis" table.

Additional references for this section that can be used to complete your worksheets include:
· Step-by-Step Examples throughout this section · Definitions of Terms in this section

IMPORTANT: LOOK AT THE REFERENCED TABLE AS YOU GO

❶ Review the risks identified in section 2 for each of the responding country sectors considering the content of "Related Sector" column.

❷ In the "Contingency Strategy" column, list actions that can be taken to mitigate the impact of risks in each of the Source Sectors in the event of failure, loss or disruption. Identified actions are subjective and should be based on brainstorming for potential solutions. Prioritize the actions and list the most viable solutions in the Contingency Strategy column.

III. DEFINITIONS

No New Terms in this Section

IV. SAMPLE CONTINGENCY STRATEGY TABLE

The example below is provided to give responding countries an illustration of potential responses.

NATIONAL RISK ANALYSIS TABLE

Reponding Country: X
Sector: FINANCE

National Risk Analysis List Source: Risks Identified in the Inventory and Checklist

Source Sector	Risks Identified	Impact	Related to Sector	Probability of Sector Failure	Action Office		Contingency Strategy
FINANCE	Loss of Clearance Bank Services	HI	Finance	MED	Central Bank	1	Develop annual fall back procedures for the Central Bank Curtail Central Bank non-essential operations
FINANCE	Failure of telephone service	HI	Telecommunications	MED	PTT	1	Require Contingency Plans for both Telecommunications and Banks
FINANCE	Electronic Fund Transfer failure	HI	Energy	LO	Dept. of Energy	2	Purchase additional power from country ÒYÓ
FINANCE	Failure of Public Transport System due to Power failure	MED	Transportation	LO	Dept. of Transport	3	Encourage companies to create plans for use of alternate transportation means